

WHAT IS CLAIMED IS:

1. A method of forming a VCSEL having a plurality of layers, comprising:

forming an annular ohmic intracavity contact pad
5 adjacent an optical cavity;
forming a mesa in at least a portion of said plurality of VCSEL layers in accordance with said annular ohmic intracavity contact pad to expose an oxide aperture layer;
and
10 oxidizing said oxide aperture layer to form an oxide aperture that is self-aligned with said annular ohmic intracavity contact pad.

2. The method of claim 1 further comprising forming
15 a photoresist layer adjacent said annular ohmic intracavity contact pad and wherein forming a mesa in at least a portion of said plurality of VCSEL layers comprises etching at least a portion of said plurality of VCSEL layers using said annular ohmic intracavity contact pad as an etch mask
20 to define mesa sidewalls.

3. The method of claim 1 further comprising forming
an upper mirror adjacent said annular ohmic intracavity contact pad and said optical cavity.
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4. The method of claim 1 wherein said optical cavity comprises an active region comprising one or more active layers.
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5. The method of claim 4 wherein said optical cavity further comprises a delta doped upper cladding and wherein said ohmic contact is formed adjacent said delta doped upper cladding to reduce contact resistance of said annular
5 ohmic contact.

6. The method of claim 1 further comprising forming a dielectric spacer layer adjacent said optical cavity.

10 7. The method of claim 6 further comprising forming a multi-step photoresist adjacent said dielectric spacer layer and patterning said multi-step photoresist to define a via in said dielectric spacer layer for formation of said annular ohmic intracavity contact adjacent said optical
15 cavity.